Valuing a Business

The Analysis and Appraisal of Closely Held Companies

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Chapter 10

Income Approach: Capitalized Economic Income Method

There are two variations of the capitalized future economic income method that are widely used in business valuation today:

1. The perpetual economic income stream model
2. The constant growth model (with a variation commonly referred to as the *Gordon growth model*)[1]

This chapter transitions the reader from the discounted future economic income method of valuation to the capitalized future economic income method, and presents the mechanics, applications, and caveats in utilizing the various versions of the capitalized income method that are used in practice.

Essential Difference between the Discounting Model and the Capitalization Model

A *discount rate* converts *all* of the expected future returns on investment (however defined) to an indicated present value.

In contrast to the more comprehensive method of discounting *all* of the expected returns, a *capitalization rate* converts *only a single expected economic return number* to an indicated present value.

Discount rate	A rate of return used to convert a monetary sum, payable or receivable in the future, into a present value
Capitalization rate	Any divisor (usually expressed as a percentage) that is used to convert anticipated economic benefits of a single period into value[2]
Capitalization of economic income method	A method within the income approach whereby economic benefits for a representative single period are converted to value through division by a capitalization rate[3]
Capitalization	A conversion of a single period of economic benefits into value[4]

In property appraisal terminology, the similar method is called *direct capitalization*, the basic subject matter of this chapter. It is distinguished from what property appraisers call *yield capitalization*, which is comparable to the business appraiser's *discounted economic income*, the subject of the previous chapter.

The capitalized economic income method means the application of one divisor (or multiple) to one economic income measure. The result is an indication of value derived from that single division or multiplication.

For example, let's assume that the next year's net cash flow is expected to be $200,000,000 and the appropriate direct capitalization rate is 25 percent. In this case, the indicated value of the business is $800,000,000:

$$\frac{\$200,000,000}{0.25} = \$800,000,000$$

[1] There can be other variations, such as capitalizing an income stream with a finite life. One who understands the details of the last chapter and this chapter should be able to construct capitalization rates for such variations.
[2] American Society of Appraisers, Business Valuation Standards, Definitions (Herndon, VA: American Society of Appraisers, 2005).
[3] Ibid.
[4] Ibid.

Note from the definition above that the method is based on anticipation. Like the discounted economic income method, it is a method to convert *anticipated* income to a present value.

The capitalized economic income method is used as frequently as the discounted economic income method, and probably even more frequently in the valuation of smaller businesses. So why does this text put the discounted economic income method first? Because, *the capitalized economic income method is simply an abridged version of the discounted economic income method*. The discounted economic income method is presented first because the valuation theory that is applied in the discounted economic income method is more comprehensive. And once the analyst has a grasp of the discounted economic income method, the valuation theory that is applied in the capitalized income method can be grasped more easily.

The Perpetual Economic Income Stream Model

Consider the case of a preferred stock that has no maturity and no call provision (i.e., no expected redemption), paying a fixed dividend in perpetuity. The basic discounted economic income formula would value this preferred stock as follows:

Formula 10–1

$$PV = \sum_{i=1}^{n} \frac{E_i}{(1+k_p)^i}$$

where:

PV	=	Present value
$\sum$	=	Sum of
n	=	The last period for which economic income is expected; n may equal infinity (i.e., ∞) if the economic income is expected to continue in perpetuity
E_i	=	The expected amount of economic income in each ith period in the future
k_p	=	Rate of return on preferred stock
i	=	The period (usually stated as a number of years) in the future in which the prospective economic income is expected to be received

It can be shown mathematically that when the expected economic income is a constant amount in perpetuity, the above formula can be simplified to:

Formula 10–2

$$PV = \frac{E}{k}$$

where:

E	=	An expected amount of economic income in every period ahead in perpetuity
k	=	Discount rate (cost of capital for that level of economic income)

In this unique case, the result is that the expected level amount of economic income can be capitalized by dividing it by the discount rate, and the capitalization rate equals the discount rate. Thus, in this case:

Formula 10–3

$$c = k$$

where:

c = Capitalization rate
k = Discount rate (cost of capital for that level of economic income)

In other words, *in the unique case where the expected economic income is a net level amount in perpetuity, the discount rate is equal to the capitalization rate.*

In any other case, where expected future amounts of economic income differ from the amount used in the capitalization formula, the difference between expected prospective amounts and the amount being capitalized is reflected in the difference between the appropriate discount rate (i.e., total yield or total required rate of return) and the capitalization rate (the divisor by which a single period return is converted to an estimate of value).

The simplest example of this is a noncallable preferred stock that pays a fixed dividend in perpetuity. Assume the following valuation variables:

Annual dividend rate	$5 per share
Required rate of return	10%

In this case, the stock would be valued as follows:

$$\frac{\$5}{0.10} = \$50 \text{ per share}$$

Converting a Discount Rate to a Capitalization Rate—The Constant Growth Model

Discounting, for which a *discount rate* is used, is a process applied to one or a series of specific expected income amounts, as of a specified time or times in the future, to convert those expected amounts to an estimate of present value. The discount rate is applied to all the expected future economic income. Therefore, any expected future growth in returns is captured in the numerator of the discounted economic income formula.

Capitalizing, for which a *capitalization rate* is used, is a process applied to an amount representing some measure of economic income, for some single period, to convert that economic income amount to an estimate of present value. Capitalization procedures can be used with expected, current, historical, or "normalized" (or "stabilized") measures of economic income. If growth is expected from the base level of economic income being capitalized, then that expected growth is reflected in the capitalization rate.

This leads to the logical answer as to the difference between the discount rate and the capitalization rate: *for an investment with perpetual life, the difference*

between the discount rate and the capitalization rate is the annually compounded percentage rate of growth or decline in perpetuity in the economic income variable being discounted or capitalized.

If the level of economic income expected in the 12 months immediately following the valuation date is expected to increase after that time at a constant average annually compounded rate in perpetuity, then it can be demonstrated mathematically that the basic discounted economic income formula of:

Formula 10–4

$$PV = \sum_{i=1}^{n} \frac{E_i}{(1+k)^i}$$

can be simplified to:

Formula 10–5

$$PV = \frac{E_1}{k-g}$$

where:

PV = Present value
E_1 = Expected amount of economic income in the period immediately ahead
k = Discount rate (required total rate of return)
g = Expected average growth rate of E, annually compounded in perpetuity

In the above formula, the divisor (k–g) represents the capitalization rate, a relationship that can be expressed as an algebraic formula as follows:

Formula 10–6

$$c = k - g$$

where:

c = Capitalization rate (a rate to be used as a divisor to convert a return flow variable, such as net cash flow, to an indication of value)
k = Discount rate
g = Annually compounded rate of growth in the economic income variable being capitalized over the life of the investment (if there is an expected rate of decline, g is negative, so the effect is that the rate of decline is *added* to the discount rate to conclude the capitalization rate)

This leads to the basic capitalization formula:

Formula 10–7

$$PV = \frac{E_1}{c}$$

where:

PV = Present value
E_1 = Expected economic income in the period immediately ahead
c = Capitalization rate

In this formula, the capitalization rate is the reciprocal of a valuation pricing multiple. For example, if next year's economic income is projected to be $1.00, and the stock is priced at $12.50, it is selling at 12.5 times next year's income. This equates to a capitalization rate of 8 percent—that is, $1 \div 12.5 = 0.08$.

A simple example of the perpetual growth model would be a stock for which we have an economic income estimate for the year immediately following the effective valuation date, and for which we expect a constant growth rate in that amount of income in the years to follow. Assume the following:

Next year's expected economic income (E_1)	$10
Discount rate (k) (required total rate of return)	15%
Sustainable income growth rate (g)	5%

In this case, the share of stock would be valued as follows:

$$\frac{\$10}{0.15 - 0.05} = \frac{\$10}{0.10} = \$100$$

The Gordon Growth Model

As noted earlier, the direct capitalization model assumes that the base level of normalized economic income to be capitalized is the expected income in the period *immediately following* the effective valuation date (i.e., E_1 in our notation system).

If the normalized economic income for the period *immediately* preceding the effective valuation date is considered a reasonable base level from which to project sustainable growth, the *Gordon growth model* version of the capitalized economic income method is appropriate. Using net cash flow as the economic income measure, the formula for the Gordon growth model is as follows:

Formula 10–8

$$PV = \frac{E_o(1+g)}{k-g}$$

where:

PV	=	Present value
E_o	=	Amount of economic income in the period immediately past
k	=	Discount rate (required yield rate or total rate of return)
g	=	Expected average growth rate of E, annually compounded in perpetuity

Formulas 10–5 and 10–8 are often referred to as the *Gordon growth model*, the *dividend growth model*, or the *constant growth model*.[5] They represent a technically correct simplification of the basic discounted economic income model, *provided that the critical assumption underlying this simplification is met—that is, the economic income variable is expected to have a constant average annually compounded rate of growth in perpetuity.*

[5] For a mathematical proof of this formula, see, for example, Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance*, 7th ed. (New York: McGraw-Hill, 2003), pp. 37–38.

Since this assumption is rarely met in the real world, this growth model is often used only as the final stage of a multistage discounted economic income model. For example, it is common to make specific income forecasts for some period (often five years or until the company is expected to reach a reasonably stable state), and then use the constant growth model to reflect income expectations from that point forward. An example of this will be shown later in the chapter.

Assume the following:

Last year's economic income (E_o)	$10
Discount rate (k) (required total rate of return)	15%
Sustainable income growth rate (g)	5%

In this case the investment would be valued as follows:

$$\frac{\$10\,(1+0.05)}{0.15-0.05}=\frac{\$10.50}{0.10}=\$105$$

Sensitivity to Growth Rate Assumptions

Changes in the growth rate projected, sometimes seemingly small, can result in striking changes. In the basic constant growth example, we had the following:

$$\frac{E_1}{k-g}=\frac{\$10}{0.15-0.05}=\frac{\$10}{0.10}=\$100$$

Now let's just increase the assumed growth rate by 1 percent. Now we have:

$$\frac{E_1}{k-g}=\frac{\$10}{0.15-0.06}=\frac{\$10}{0.09}=\$111.11$$

One percentage point change in the growth rate produced more than an 11 percent change in the indicated value!

Taking the example a step further, let's assume a 10 percent weighted average cost of capital, with $100 debt and a 5 percent growth rate:

$$PV_f=\frac{NCF_f}{k-g}=\frac{\$10}{0.10-0.05}=\frac{\$10}{0.05}=\$200$$

less debt	100
value of equity	$100

Now let's increase the assumed growth rate by 1 percent. Now we have:

$$PV_f=\frac{NCF_f}{k-g}=\frac{\$10}{0.10-0.06}=\frac{\$10}{0.04}=\$250$$

less debt	100
value of equity	$150

In this leveraged investment a one percentage point change in the growth rate resulted in a 25 percent increase in the indicated value of invested capital and a 50 percent increase in the indicated value of equity!

This example actually overstates the effect of higher growth relative to a more detailed analysis. As mentioned in Chapter 9, higher growth would require higher investment in fixed assets and working capital. Thus, the numerator (net cash flows) of the capitalization formula would logically get smaller with a higher expected growth assumption. Under certain industry conditions, the higher growth might add nothing to value if the required extra annual investments were sufficiently large.

Obviously, the closer the growth rate to the discount rate, the greater the sensitivity. When the projected growth rate reaches or exceeds the discount rate in the perpetual growth model, mathematically, the capitalization rate is zero or negative. This relationship leads to the generally unreasonable conclusion that the company is infinitely valuable.

Because such large impacts may result from relatively small changes in input variables, it is often enlightening to perform some sensitivity analysis in conjunction with a discounted or capitalized economic income method. This could take the form of a sensitivity table showing the impact of a range of discount rates, terminal value multiples, growth rates, and cash flow projections.

When to Use the Discounting versus the Capitalization Method

The obvious implication of all this, when one stops to think about it simplistically, is that *the difference between the discounting model and the capitalization model is how one treats anticipated changes in future income over time*:

1. In discounting, *changes over time in the expected economic income are treated specifically in the terms of the numerator of the present value equation.*
2. In capitalizing, *changes over time in the expected economic income are treated as a single average percentage change, and that annualized percentage is subtracted (assuming it is positive) from the cost of capital in the denominator.*

The important conceptual underpinning of the capitalized economic income valuation model is that there is either a constant annual income stream in perpetuity or a constant annualized rate of growth (or decline) in the economic income variable being capitalized in perpetuity. Obviously, this constant growth rate projection is rarely met in the real world.

Unlike the discounted economic income model, the capitalization model does not take into consideration the timing of future changes in expected economic income. The greater the differences in the anticipated changes over time, especially in the early years, the more the analyst is encouraged to apply the discounted economic income method rather than the capitalized income method.

This leads to some generalizations about the relative attractiveness of the two basic income approach valuation methods:

1. *Stable or evenly growing economic income flow.* If the economic income flow is either stable or growing (or declining) at a fairly even rate, the capitalized

economic income method should conclude as accurate a value indication as the discounted economic income method.

2. *Predictable but uneven changes*. If there are reasons to believe that changes will be significant but predictable, even though uneven, the discounted economic income model should produce a more accurate valuation.
3. *Short- or intermediate-term supergrowth*. If growth is expected to be quite high in the immediate future, the discounted economic income model should produce a more accurate valuation. One of the most common mistakes in the application of this method is to use a 10 percent growth for the first few years (even though it may not be sustainable over the long term) and then subtract that 10 percent from the present value discount rate. This mistake will result in a low capitalization rate and in an overvaluation of the subject company.
4. *Changes that are erratic and unpredictable as to timing*. If the company's economic income is unstable and also more or less random as to timing, the company's risk increases, and thus the present value discount rate increases. However, the discounted economic income method may not be able to produce any more accurate a value indication than the direct capitalization method.

Equivalence of the Discounting and Capitalization Methods

Exhibit 10–1 shows that, with the same set of assumptions, the discounted economic income method and the capitalized economic income method using the Gordon growth model with a 5 percent growth rate will produce an identical valuation indication. Therefore, an analyst using the capitalized economic income method should understand its parent method (the discounted economic income method) and think through, as a form of mental verification of reasonableness, "If I carried out the full discounting procedure, would I get approximately the same answer?" If not, the valuation variables used in the capitalization method should be reexamined, or perhaps the capitalization method should only be used for a terminal value in conjunction with the discounting method.

Implementing the Capitalized Economic Income Method

As we have seen, like the discounted economic income method, the essence of the capitalized income method is twofold:

1. *Projecting an anticipated economic income stream*. As opposed to projecting the amount and timing of each individual economic income flow the business is expected to produce for its owner, the direct capitalization method requires projecting a single, sustainable amount of future economic income (the *numerator* in the arithmetic formula).
2. *Capitalizing the expected economic income amount to produce a present value*. This second step involves dividing the expected economic income by a rate that reflects the risk (degree of certainty or uncertainty) of receiving that expected amount on a regular basis. In other words, the starting point is the *present value discount rate*, as discussed in the previous chapter. However, the numerator

Exhibit 10–1

Equivalence of Discounted Economic Income Method and Capitalized Economic Income Method under Constant Growth Rate Scenario

Projection scenario: $8,000,000 net cash flow to equity in Year 1, a 5 percent perpetual annual growth rate from Year 1 forward, and a 25 percent present value discount rate

Discounted Economic Income Method

Projection period:	Year 1	Year 2	Year 3	Terminal Value
Indicated value of business entity*	$= \frac{\$8,000,000}{(1+0.25)} + \frac{\$8,400,000}{(1+0.25)^2} + \frac{\$8,820,000}{(1+0.25)^3} + \frac{\frac{\$8,820,000\,(1.05)}{0.25-0.05}}{(1+0.25)^3}$			
	$= \frac{\$8,000,000}{(1.25)} + \frac{\$8,400,000}{(1.25)^2} + \frac{\$8,820,000}{(1.25)^3} + \frac{\frac{\$8,820,000\,(1.05)}{0.20}}{(1.25)^3}$			
	$= \$6,400,000 + \$5,376,000 + \$4,515,800 + \frac{\$46,305,000}{(1.25)^3}$			
	$= \$6,400,000 + \$5,376,000 + \$4,515,800 + \$23,708,200$			
Indicated value of business entity	$= \$40,000,000$			

Capitalized Economic Income Method

Projection period:	Year 1
Economic income to equity	$8,000,000
Present value discount rate minus expected long-term growth rate	0.25 – 0.05
Indicated value of business entity	$40,000,000

* using Formula 10–12

reflects only a *single period* of economic income, not any future changes. Therefore, if changes are expected, the present value discount rate should be modified by subtracting (or adding) the anticipated rate of growth (or decline) in the economic income flow to convert the present value discount rate into a direct capitalization rate (the *denominator* in the arithmetic formula).

Projecting the Basic Economic Income Level and the Growth Rate

The projections needed for the capitalized economic income method are twofold:

1. The normalized and sustainable expected base economic income
2. The expected sustainable long-term growth rate

These projections may be prepared by the company or by the valuation analyst, ideally with some involvement by both. The arithmetic of this valuation

method could not be more simple. However, this fact implies the extreme importance of the realism and reasonableness of the expectations impounded in the base expected economic income estimate and the expected long-term growth rate.

Start with Sustainable Expected Economic Income

In order for the capitalized economic income method to produce a realistic value indication, the numerator should be a realistic sustainable base of expected economic income. The expected economic income should be either stable or expected to change at a somewhat constant average rate over a long period of time.

As with the discounted economic income method, this method requires carrying out the adjusted income statement procedures discussed in Chapter 7. Of course, if the operational economic income variable is net cash flow, the adjustments to reach that measure (as defined in the previous chapter) also should be made.

Again, the capitalized economic income method is a forward-looking analysis, just as the discounted economic income method is. The economic income measure capitalized should represent *expected* future economic income. A simple average—or a weighted average—of past operating results is not an adequate procedure, in and of itself, to develop this projection. The historical average should be used only if the analyst is able to justify the notion that this past average is indeed a reasonable proxy for future economic income expectations. Of course, the analyst may consider company budgets, plans, forecasts, and other forward-looking data in the estimation of the normalized (or sustainable) economic income measure.

The Projected Long-Term Growth Rate

Treating the Impact of Inflation. If the build-up procedure or the capital asset pricing model (CAPM) procedure is used to develop the present value discount rate from which the growth rate is to be subtracted in order to derive a direct capitalization rate, that discount rate incorporates the expected rate of inflation as part of the required rate of return. Since the nominal government bond interest rates used in developing these discount rates incorporate expected inflation over the duration of the bond, the implication is that the selected long-term growth rate should also reflect the impact of expected inflation on the economic income variable being capitalized.

For example, if the projection of the financial performance for the company assumes no real growth, but it is expected that the economic income will grow enough to keep up with the general level of expected inflation, the consensus long-term inflation rate should be subtracted from the present value discount rate in order to arrive at the appropriate direct capitalization rate. A good source for expected long-term inflation is the semiannual *Livingston Survey* published by the Federal Reserve Bank of Philadelphia. Another is the monthly newsletter *Blue Chip Economic Indicators*.

Sustainability. The economic income capitalization method has impounded in it the implied projection that the growth rate used to arrive at the direct

capitalization rate is a long-term sustainable growth rate. In fact, technically, it is a growth rate expected *in perpetuity*.

As a practical matter, discount rates and capitalization rates for investments in small businesses and professional practices are relatively high compared with most other investments. Therefore, changes in the growth rate after 15 or 20 years would have almost no impact on the present value. However, misspecification of the projected growth rate during the first 10 years or so can have a major impact on the indicated value.

As suggested earlier, if significant changes in the growth rate are expected within the first 10 years, the discounted economic income model probably is preferable to the economic income capitalization model. The economic income capitalization model can be incorporated to estimate the terminal value in the discounted economic income calculations, as explained further in a subsequent section.

If some changes in the growth rate are expected but are either too minimal or too unpredictable as to timing to justify using the discounted economic income method, some subjective adjustment to the projected growth rate using the capitalized economic income method might be an acceptable compromise. To the extent that the higher growth is expected in the early years, the long-term average growth rate used might be raised slightly to reflect an average of higher short-term and lower long-term growth and vice versa.

A company's expected long-term growth rate will be little affected by near-term growth considerations if the rate is being estimated for a terminal value at the end of a forecast horizon in the discounted economic income model. Many analysts argue that the terminal growth rate should never be higher than the expected long-term nominal growth rate of the general economy, which includes both inflation and real growth. If the company is in an industry subject to vigorous competitive pressure, with little prospect for real growth without large capital expenditures, then perpetual growth at the rate of expected long-term inflation may be reasonable (i.e., zero real growth). The growth rate may be negative if the company's income comes from a wasting asset, such as petroleum reserves.

Defining the Components in the Capitalization Method

It is noteworthy that, as presented above, this is a *very generalized* formula. To actually use this valuation method, the analyst should be specific about the same points as in the discounted economic income method:

1. Is the analyst valuing *all invested capital* or just the *common equity* with these calculations?
2. What measure of economic income is being projected to be used as the numerator (e.g., net cash flow, net income, or some other economic income measure)?
3. The direct capitalization rate (c) represents the cost of what kind of capital (e.g., weighted average for net cash flow to invested capital, net cash flow available to equity, or something else)? In other words, the direct capitalization rate is a single figure representing the cost of a certain type of capital (the present value discount rate), modified by the projected annual percentage growth (or decline) in the economic income flow available to the capital

structure being valued. *The direct capitalization rate must be appropriate for the definition of economic income being capitalized.*

Valuing Equity versus Invested Capital

The same fundamental principles apply with regard to the valuation of equity versus invested capital as those that apply in the discounting method.

Whichever measure of capital is selected as the valuation subject—owners' equity or invested capital—all of the economic income accruing to that class of capital should be included in the numerator.

It is noteworthy, however, that the direct capitalization model is much more sensitive to the projected rate of growth when it is applied to all invested capital than when it is applied only to owners' equity. This is because the present value discount rate is the *weighted average cost of capital* for invested capital (blended debt rate and equity rate). And, that rate is lower than the cost of equity capital alone. If the same percentage growth rate is projected on economic income available to invested capital as to owners' equity, the growth rate will have a greater impact on the resulting value of the invested capital.

Selecting the Appropriate Measure of Economic Income

As with the discounted economic income method, most valuation professionals today prefer to use *net cash flow* whether valuing equity or invested capital, for the same reasons as discussed in the previous chapter.

If you are considering using *net income*, the entire discussion in the previous chapter applies and should be read and applied in conjunction with this chapter.

We believe that capitalization of other income variables (e.g., gross revenue; owner's discretionary earnings; gross cash flow; and earnings before interest, taxes, depreciation, and amortization (EBITDA) are better handled within the scope of the market approach. That is because capitalization rates for those economic income variables are better developed by direct observations of transactions in the market than by modifications to a build-up or CAPM present value discount rate.

Modification of the Capitalized Economic Income Method to Reflect the Midyear Discounting Convention

The basic capitalized economic income method, as presented so far, reflects the implicit assumption that the income becomes available to the owners of the subject business at the end of each period (usually assumed to be a year). This is a reasonable assumption for some businesses. This is because, at the end of the year, the owners assess the operating results and capital requirements, and distribute income in some form—such as dividends, partner withdrawals, or bonuses to owners.

The results of this research may eventually be incorporated into expert testimony or brought into evidence in other ways. Attorneys in cross-examination, arguments, and briefs may also use such information.

Calculating the Amount of Damages

Although the burden of proof regarding damages rests with the plaintiff, and at times may appear to represent a near monumental task, defendants assume significant risk when they rely upon a plaintiff's inability to calculate exact damages. This is because the court may merely require that the plaintiff's presentation be reasonable. It is essential that defendants provide expert evidence as to the actual amount of damages (or lack of damages). Otherwise, a defendant may end up facing a significant liability at the conclusion of the trial, regardless of how weak the plaintiff's presentation may have been, because that presentation was the only proof provided.

Economic damages often require or may benefit from the use of business valuation methods. Both disciplines rely heavily on the income approach method. Damages experts need not consider more than one approach or method and need not limit their examination to data that were available prior to the valuation date. Any business valuation analyst who is asked to express an opinion regarding economic damages should be careful to recognize the many differences between these two disciplines.[3]

Though the circumstances surrounding different damage claims will determine the specific type of claim filed (e.g., breach of contract, antitrust, lost business opportunity), the methods used to calculate claims are fairly standard. With the exception of breach of contract, which is often covered by liquidated damages and other provisions within the contract itself, most damage claims can be calculated by administering one or more of the following methods:

1. Before and after
2. Yardstick (comparable)
3. Sales projection ("but for")

However, no matter what measure of damages is used, the analysis of the amount of loss is always calculated as: [what the plaintiff would have made] minus [what the plaintiff did make] equals loss. If the losses are projected into the future, then they are subject to present value based on the certainty of their receipt. If damages are for historical periods, then the award will be subject to prejudgment interest. Such interest varies by jurisdiction.

The Before-and-After Method

Using the before-and-after method, economic income is estimated during the damage period based upon results (1) attained prior to the alleged damaging acts, and/or (2) after the effects of the alleged acts have subsided, and either or both of

[3] For more information on the differences between economic damages estimates and business valuation, see John R. Phillips and Michael Joseph Wagner, "Economic Damages: Use and Abuse of Business Valuation Concepts" (Chapter 14) in *The Handbook of Advanced Business Valuation*, Robert F. Reilly and Robert P. Schweihs, eds. (New York, McGraw-Hill, 2000).

these is compared with results during the period of the effect of the alleged acts. The success of this method depends, of course, on the ability of the expert to establish and support a proven historical financial record for the subject property so that operations preceding and succeeding the event are able to serve as "damage bookends," clearly illustrating the effects of the interruption or the violation period. Ideally, operations before and after the damage period will show similar trends, thereby enabling the expert to estimate the subject property's performance during the damage period using either pre- or postdamage operations as a performance standard with comparable damage amounts resulting. In many cases, only the "before" period or the "after" period is available for use to predict the "but for" performance during the damage period.

The Yardstick (Comparable) Method

The yardstick, or comparable, method requires the expert to identify companies or industries that are comparable to the plaintiff's company and plot the performance of the plaintiff's company along the lines of the comparable companies' or industry's performances. This method, of course, requires that the expert not only satisfy the often difficult task of identifying similar companies or industries, but also that the companies or industries selected by the expert be, themselves, unaffected by the alleged damaging acts of the defendant. Applying as a proxy the performance of another company or a particular industry to project the performance of the subject company, absent the alleged damaging actions of the defendant, is a straightforward, understandable method in estimating losses. Once again, the key lies in carefully identifying the most appropriate guideline companies or industry. In some instances, a comparable but unaffected branch or division of the subject company may provide the needed yardstick.

Sales Projections ("But For") Method

The sales projections, or "but for," method entails the creation of a performance model for the subject company, complete with growth and return estimates. Using the model, operations for the subject company are projected during the damage period absent (i.e., "but for") the alleged effects of the defendant's actions. The returns suggested by the model are then compared with the actual results realized by the company during the period.

Of these three methods, probably the most often applied method is some variation of the sales projection method. Typically, most business operators are in a position to provide sales projections for their businesses, and fit within one of a countless number of industries subject to annual, semiannual, or even quarterly projections by a variety of both public and private data sources. Such circumstances lend themselves quite nicely to the development of simulation models designed specifically for the subject business. However, a key factor to keep in mind when developing a sales projection and the resulting profits is that courts tend to prefer projections based on historical track records, even in light of numerous concurring industry forecasts and other published financial data regarding "normal" growth and returns for participants within the relevant industry.

Regardless of the method undertaken, the extent to which projected results exceed actual results represents the plaintiff's loss. This loss often not only represents

profits lost during the damage period, but also can, and often does, represent a decrease in overall business value separate from lost profits. Whatever is represented by the total damage claim, all concerned parties should bear in mind that the sum total of combined lost profits and any decrease in overall business value is limited to the present value of total future profits anticipated by the business prior to the alleged damaging acts. The reason is that the value of any business is the present (discounted) value of all expected future profits. Intuitively, this should serve as a recurring reasonableness check throughout the calculation process.

Mitigation

The principle of mitigation suggests that even victims of contract breaches have a duty to mitigate damages—that is, to keep them as low as possible—and that damages are not recoverable for losses that the injured party could have avoided without undue risk, burden, or humiliation. Even in fraud situations, courts have long held that once a plaintiff learns of the fraud, alleged damages that accrue thereafter are not caused by the fraud, but rather by the plaintiff's decision to continue its relationship with the defendant irrespective of the plaintiff's knowledge of the fraud.

With regard to buyers and sellers of goods or services, the buyer is required by the principle of mitigation to "cover" by making reasonable efforts to find replacement goods or services to purchase, while a breached seller is obligated to make reasonable efforts to find an alternative purchaser for the breached goods or services. Excess costs incurred by the buyer in acquiring replacement goods, differences between the contract price and the resale price incurred by the seller, and incidental damages such as expenses incurred in stopping the manufacture of goods, and inspecting, transporting, receiving, or storing goods that resulted from the breach are normally recoverable. The burden of proof for mitigation of damages lies with the defendant, and if the defendant fails to raise it during the case in chief, the issue cannot be raised on appeal. Therefore, it should be a part of the defense where appropriate.

Summary of Damages

In general, damage cases require a creative, but realistic, approach to calculating "hypothetical" values absent the alleged effects of the damaging party's actions. A thorough understanding of the damaged party's industry is important in any damage calculation, and, if available, a historical record of the damaged party's operations should be beneficial. Knowledge of case law will provide the expert with important guidance regarding approaches and methods that the courts will or will not accept in the calculation of damages in the specific legal context in question.

Work Product

Reports that the expert may provide can range from an oral expression of the analysis and conclusions, a single letter addressing a single fact or conclusion, to a detailed narrative report.